

14. (Twice Amended) A nut assembly for use in association with a threaded fastener comprising:

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a nut having an internal screw thread barrel; and
a fastener insert disposed within said barrel which is formed from a metal alloy which is resistant to galling and exhibits improved yield strength when said fastener insert is disposed within said internal screw thread barrel.

REMARKS

Claims 1, 2, 4-6, 8-10, 12-16, 18 and 19 are now pending in the application. In this response, Applicants have amended Claims 1, 6, 10 and 14.

Claims 1, 2, 4-6, 8-10, 12-16, 18 and 19 currently stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-18 of co-pending application serial no. 09/753,989.

Applicant respectfully submits that the above noted rejection under the doctrine of obviousness-type double patenting is moot. Upon receiving notification from the Examiner as to the allowable state of the present application, Applicant intends to file a Request to Expressly Abandon the application designated by U.S. Serial No. 09/753,989.

REJECTIONS UNDER 35 U.S.C. § 103

Claims 1, 2, 4-6, 8-10, 12-16, 18 and 19 currently stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Toosky in view of Schumacher and further in view of Cosenza. In this regard, the Examiner states Toosky discloses a nut having an insert which is a helically coiled wire. The Examiner also states that Schumacher discloses an alloy made of elements defined to be within a specific range to resist galling. The Examiner believes it would have been obvious for one of ordinary skill in the art to make the insert of Toosky out of a

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material as disclosed in Schumacher because an alloy which itself resists galling would be preferable to a separate coating or plating as currently employed in Toosky.

In response to the foregoing rejection under 35 U.S.C. §103(a), Applicant respectfully submits that neither Schumacher nor Toosky et al, alone or in combination, recognized that, in addition to the improved anti-galling characteristic, a helically coiled fastener insert formed from the alloys disclosed under the present invention would exhibit dramatically improved yield strengths. As noted at page 5, lines 16-18, the fastener inserts of the present invention are generally larger in size than the tapped hole into which they are to be disposed to ensure that the insert becomes firmly secured upon installation. As further noted on page 4, lines 7-10 of the application as filed, the yield strength of helically coiled fastener inserts formed from the alloys recited exhibited yield strengths which are almost twice that of fasteners formed from 304 type stainless steel.

As discussed during the interview held on January 8, 2002, yield strength is a well recognized term of art which relates to the spring back effect of insert coils. This improved yield strength results in higher stress on the convolutions of the installed insert thus creating increased tangential forces on the flanks of the threads in a tapped hole, for example. As a result, the retention of the helically coiled insert in the tapped hole increases substantially, over and above the security afforded by the size of the insert. This improved yield strength is responsible for precluding movement of the fastener insert when the threaded fastener is installed into the insert.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present

application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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By: Robert M. Siminski
Robert M. Siminski
Reg. No. 36,007

HARNES, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

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ATTACHMENT FOR CLAIM AMENDMENTS

The following is a marked up version of each amended claim in which underlines indicates insertions and brackets indicate deletions.

1. (Twice Amended) A fastener insert formed from a nitrogen strengthened stainless steel alloy for insertion into a tapped hole, comprising:

- a) from about 0.05 to .15% carbon;
 - b) from about 5.0 to 12.0% manganese;
 - c) from about 2.0 to 6.0% silicon;
 - d) from about 12.0 to 20.0% chromium;
 - e) from about 6.0 to 12.0% nickel;
 - f) from about 0.02 to 0.8% nitrogen;
- with the remainder being iron,

wherein [at least a portion of said fastener insert is substantially diamond shaped in cross-section.] said insert exhibits improved yield strength when inserted into said tapped hole.

6. (Twice Amended) A helically coiled screw thread insert disposable within a tapped hole or nut for receiving a threaded fastener, said insert being formed from an alloy comprising:

- a) from about 0.05 to 0.15% carbon; b) from about 5.0 to 12.0% manganese; c) from about 2.0 to 6.0% silicon; d) from about 12.0 to 20.0% chromium; e) from about 6.0 to 12.0% nickel; f) from about 0.02 to 0.8% nitrogen; with the remainder being iron, [at least a portion of said fastener insert having a substantially diamond shape in cross-section.] said insert exhibiting improved yield strength when inserted into said tapped hole or nut.

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10. (Twice Amended) A helically coiled screw thread insert disposable within a tapped hole or nut for receiving a threaded fastener, said insert being formed from an alloy comprising:

a) from about 0.08 to 0.1% carbon; b) from about 7.0 to 9.0% manganese; c) from about 3.5 to 4.5% silicon; d) from about 16.0 to 18.0% chromium; e) from about 8.0 to 9.0% nickel; f) from about 0.08 to 0.18% nitrogen; with the remainder being iron, [at least a portion of said fastener insert having a substantially diamond shape in cross-section.] said insert exhibiting improved yield strength when inserted into said tapped hole or nut.

14. (Twice Amended) A nut assembly for use in association with a threaded fastener comprising:

a nut having an internal screw thread barrel; and

a fastener insert disposed within said barrel which is formed from a metal alloy which is resistant to galling[, wherein at least a portion of said fastener insert is substantially diamond shape in cross-section.] and exhibits improved yield strength when said fastener insert is disposed within said internal screw thread barrel.

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